

Temperature Capsule



At left, Dr. Protagoras Cutchis of Johns Hopkins Applied Physics Laboratory, Laurel, Maryland is holding an ingestible mini-thermometer capable of measuring and relaying internal body temperatures. Developed by APL and Goddard Space Flight Center, the capsule is now being marketed for medical use as the CorTemp System, produced by Human Technologies, Inc. (HTI), St. Petersburg, Florida. CorTemp incorporates a number of space technologies, among them telemetry (wireless signal transmission) and microminiaturized circuit, sensor and battery technologies.



In medical use, the CorTemp system offers a research tool to provide data never before accessible. The system includes the ingestible capsule and a recorder, which may be used for in-patients, ambulatory patients and out-patients. Shown in cutaway view below, the three-quarter-inch capsule is

ingested to make its way through the digestive system, continuously monitoring temperature by means of a quartz crystal sensor, which vibrates at a frequency that varies according to temperature. The sensor telemeters signals to the recorder, which displays and stores the data; a clinician can transfer the data to a disc, print a report or conduct in-depth computer analysis.

According to HTI, CorTemp offers one of the most accurate body core temperature readings available to medicine and research in an ambulatory environment. Free of catheters, probes and direct wire connectors, CorTemp provides greater patient comfort in post-surgery or intensive care environments and allows clinicians to monitor outpatients at home, work or play. CorTemp facilitates research and treatment related to sleep disorders, sports medicine and physiology, metabolic disease, tumor treatment by radiation, gerontology (aging), basal temperature analysis, substance abuse and other conditions.

A division of HTI — Commercial Sensor Concepts — offers industrial variants of CorTemp known as the CSC-100 Series telemetric/sensory systems for internal temperature monitoring of commercial products. Specially sized and configured to a particular use, the system has wide utility in electronics, food processing, general manufacturing, pharmaceutical and agriculture/veterinary applications. ●

